

TILES

Publication No. K-300

BASIC SPECIFICATION *for* TILEWORK *and* RELATED DOCUMENTS

Second Edition 1924



ASSOCIATED TILE MANUFACTURERS

BEAVER FALLS, PA.

THIS PUBLICATION

K-300, Basic Specification for Tilework has been in a most truly representative sense co-operatively prepared.

Members of the architectural profession, engineers, representatives of the different branches of the Government, other technical experts, tile manufacturers, contractors and tile setters—all of them—throughout the country, have contributed to and greatly enhanced the value which it is believed this publication possesses.

In expressing the hope that its contents will be helpful to all of them, to the industry, and to the public at large, the Associated Tile Manufacturers here record their appreciation of the suggestions, council and constructive criticism which have been accorded them over the long period required in the formation of these documents. They wish to express also their special appreciation of the assistance of D. Knickerbacker Boyd, who as Consulting Architect, directed the compilation of the Basic Specification, prepared the Related Documents and Index, and acted as Collaborating Editor of this publication.

To none more so than the compilers of these documents has the difficulty been apparent of so preparing them that they will be fully applicable to local conditions and to materials available in various sections of the United States and Canada. As now submitted, it is hoped that they will not only afford the basis for a better understanding of good tile installations in the present but be the means of developing further improvements in the future.

All users of these documents will confer a favor upon the compilers if they will report any omissions or deficiencies, or make suggestions for better methods or means of stipulating them which may develop through their experience in the use of this specification.

Any corrections or improvements which the practical application of these documents may disclose as desirable will be included in later editions. Any such suggestions should be addressed to

ASSOCIATED TILE MANUFACTURERS

Beaver Falls, Pa.

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EXPLANATION

of the

DOCUMENTS*

BASIC SPECIFICATION

(a) The Basic Specification (white paper) gives in detail the procedure to be followed with respect to any kind of tile installation in connection with practically every type of construction. It thus covers a complete tile installation in what might be termed a composite structure with various features of construction and equipment. For a short form intended to be written into the architect's specifications, as printed or revised, see paragraphs below entitled "Colored Pages."

(b) Such a structure might be a small residence or a large office building; a swimming pool or a subway. It might contain, in addition to the usual interior tile work, such exterior items as porches, terraces and steps; entrances, street fronts and pavements. It might be a building or other structure with tiled floors over earth or fills in basements or on platforms, etc. The work might also include alterations and additions to existing structures as well as new construction.

(c) The Basic Specification is written on the hypothesis that the tile contractor will furnish or sublet all materials and labor necessary and be responsible for the satisfactory completion of any stipulated installation of tilework, including lathing, scratch coats, and concrete setting beds, but not structural features. The colored pages afford suggestions, however, for separating various parts of an installation in any way desired.

(d) Whether the tilework is awarded as a single contract or otherwise, the following Notes to Architect, Notes to Tile Contractor, and Notes to General Contractor or Other Contractors, might well be read by all parties concerned as it has been the intention to make them helpfully interrelated.

COLORED PAGES

(e) Following the Basic Specification (white paper) are Specification Paragraphs suggested for rewriting into the Architect's Specification for Tilework (yellow paper). The writing of these, as printed or revised, in an architect's specification, automatically carries with them those portions of the Basic Specification which are applicable to the types of construction—few or many—contained in the building or other structure to be erected. The Schedules on the last of the yellow sheets, whether filled out as graphic charts or written as sequential paragraphs, will define the kinds, extent and locations of the tile installation in the building.

(f) Following the typical schedules are specification paragraphs for possible Modifications of the Basic Specification for Tilework (green paper). Wherever any part of the installation may have seemed to require separate consideration as to its inclusion or character (as for instance, whether it is desired to have building paper back of scratch coats on wooden studs or whether to debar the use of cinders in concrete setting beds) such matters are here called to attention as Optional Items.

(g) Following the Possible Modifications certain paragraphs are offered for consideration in connection with the work of Other Trades (pink paper). These are suggested for use under the various headings in an architect's specification.

*See publication K-200 Basic Information for gradings, shapes, colors, finishes, nomenclature, and manufacturing conditions, also K-400 Glazed Tiles and Trimmers for standardized caps, bases, etc., and K-500 Ceramic Mosaic for standardized patterns for fields, borders, trimmers, etc., of ceramic mosaic.

NOTES TO ARCHITECT

(h) If it is the practice in the locality in which the installation is to be made to apportion certain work among sundry contractors, then the architect will naturally provide accordingly in his specification.

(i) The specificational paragraphs which follow on yellow, green and pink paper give suggested alternate paragraphs for the separate letting of preparatory work to other contractors. With this latter procedure, in the nature of things, divided responsibility is apt to become an unfortunate corollary.

(j) The Basic Specification does not include General Conditions, or items relative to fire, compensation, liability and other insurance, water, heat, and other such matters which usually form the first part of an architect's specification.

(k) Nor does it include items relative to construction equipment, storage, protection and other matters which should, unless expressly stipulated by the architect, be arranged for between the tile contractor and the general or other contractors. To include such clauses here has been deemed uncalled for as they are well set forth in the "Standard Form of General Conditions of the Contract" issued by the American Institute of Architects. The standard form consists of 45 articles applicable to either separate or general contracts.

(l) Reference to the standard documents of the American Institute of Architects is recommended as well as to the following Notes to Tile Contractor and Notes to General or Other Contractors.

NOTES TO TILE CONTRACTOR

(m) The Basic Specification makes no mention of such items as scaffolds, hoists, water, telephone, watchman, temporary heat and light, storage, plaster-patching, insurance, or to general cleaning as distinguished from the initial cleaning of tilework.

(n) The tile contractor's attention is called to this fact so that he may arrange for the proper disposition of such items when the contract for tilework is direct with the owner and that he may make definite arrangements with the general contractor regarding such items when his status is that of a sub-contractor.

(o) The Notes to Architect and Notes to General Contractor or other Contractors should be read as additional reminders.

NOTES TO GENERAL CONTRACTOR OR OTHER CONTRACTORS

(p) The Basic Specification aims to describe an acceptable standard for best practice in tile setting. It does not include general conditions relative to administrative matters.

(q) Reference to the Notes to Architect and Notes to Tile Contractor will, it is hoped, prove of assistance to all in predetermining these matters in connection with sub-contracts.

(r) The items mentioned under Other Trades, on pink paper, form a part of the specificational paragraphs for the architect and may also serve as reminders to the general contractor in writing his sub-contracts.

MEMORANDA—Basic Specification for Tilework

[The following text is extremely faint and largely illegible. It appears to be a detailed specification document, likely containing sections on materials, installation, and quality control. The text is organized into paragraphs and possibly numbered sections, but the specific details cannot be transcribed accurately due to the low contrast of the scan.]

BASIC SPECIFICATION

for

TILEWORK

Second Edition, 1924

EXTENT OF WORK

- (1) The following specification shall be known and hereafter identified as "Basic Specification for Tilework, Second Edition, 1924 as issued by the Associated Tile Manufacturers." It specifies how the work shall be done, beginning at the bottom of the concrete setting beds and at the back of the scratch coats, carrying each through to and including the finished tile surfaces.
- (2) The location and extent of tilework together with the kinds, grades, sizes, colors and designs of the tiles shall be governed by the architect's drawings, specifications and schedules.
- (3) All materials and labor necessary for the completion of the tilework shall be furnished in accordance with this Basic Specification except as modified, if at all, by the architect's drawings, specifications and schedules.
- (4) Any such modifications, and the general conditions, and other provisions of the architect's specification, shall be accepted as additions to this Basic Specification, and where conflicting, shall take precedence over it.

TILES

NOTE. See publication K-200 Basic Information for gradings, shapes, colors, finishes, nomenclature, and manufacturing conditions, also K-400 Glazed Tiles and Trimmers for standardized caps, bases, etc., and K-500 Ceramic Mosaic for standardized patterns for fields, borders, trimmers, etc., of ceramic mosaic.

SAMPLES

- (5) If required in the architect's specification, typical samples of each kind and grade of tiles as specified and proposed to be used, and shop or setting drawings or rubbings, shall be submitted to the architect for approval.
- (6) Each sample shall be marked with the name of the manufacturer and the grade of the tile. Approved samples shall be retained by both the architect and the tile contractor.

GRADES AND CERTIFICATE

- (7) Before setting any tiles, the tile contractor shall furnish to the architect a certificate of grade, properly filled in on the Form of Grade Certificate of the Associated Tile Manufacturers. This certificate shall be signed by the manufacturer of the tiles; shall state the grade, kind and full quantities of tiles; and give identification marks for all packages of tiles furnished under this contract. Packages shall be branded with corresponding shipping marks and shall be subject to inspection by the architect or his representative before being opened.

CEMENTS, LIME AND AGGREGATES

- (8) All cement and hydrated lime shall be delivered in the original containers bearing the brand and maker's name.

PORTLAND CEMENT

- (9) All Portland cement (including white) shall comply with the Standard Specifications and Tests for Portland Cement of the American Society for Testing Materials, Serial Designation C-9-17, together with all subsequent revisions adopted by said Society.
- (10) All white cement shall be white Portland of an acceptable brand of American manufacture.

LIME

- (11) All hydrated lime shall comply with the Tentative Specifications for Hydrated Lime for Structural Purposes of the American Society for Testing Materials, together with all subsequent revisions adopted by said society.

SAND

- (12) All sand shall pass an 8 mesh sieve and shall be free from organic matter, salt, or alkali, and if it contains more than 5 per cent. by volume of material passing a 100 mesh sieve shall be well washed. All sand for concrete shall be graded from fine to coarse.

CRUSHED STONE OR GRAVEL

- (13) Crushed stone or gravel shall be hard and well graded from $\frac{1}{4}$ " to 1" ring size. If loam or clay coat the particles, or are present to a greater extent than 5 per cent. by volume, the stone or gravel shall be washed till not more than that amount is contained.

SLAG

- (14) Slag shall be clean, dense, crushed blast furnace slag, weighing not less than 70 pounds per cu. ft. when loosely placed in the measure, and containing not more than 1.3 per cent. of sulphur as sulphides.

CINDERS

- (15) Cinders shall be thoroughly vitrified, and shall be free from ashes, unburned coal or coke. Large lumps shall be broken up. All cinders shall be screened free from particles smaller than $\frac{1}{4}$ " and shall be well washed. House ashes and cinders containing sulphur in any form shall not be used. (See Par. 17.)

NOTE: Where cinders or cinder concrete are used it is recommended that metal plumbing and heating pipes be wrapped.

CONCRETE AND MORTAR

CONCRETE

- (16) Concrete shall consist of one volume of Portland cement, two and one half volumes of sand, and five volumes of gravel, crushed stone or slag, or shall consist of one part Portland cement and five parts of well graded coarse sand. At the option of the contractor, five pounds of hydrated lime may be added for each bag of Portland cement.
- (17) Cinders may be used in place of gravel, crushed stone or slag, unless prohibited by the architect's specification.
- (18) Thoroughly mix all cement and aggregates until the concrete is of uniform color and consistency throughout, using a minimum quantity of clean fresh water. Mixing may be by hand or by acceptable batch machine mixers.

- (19) Concrete shall be spread promptly after mixing and shall be well compacted to uniformly rough surfaces at proper level to receive the setting mortar.

MORTAR

- (20) Sand, cement and lime shall be thoroughly mixed in the proportions hereinafter specified under Setting, Par. (57), until of uniform color and required consistency. Mortar shall not be re-tempered, and tile shall not be set in mortar that has reached its initial set.

METAL LATH, SHRINKAGE MESH AND PAPER

METAL LATH

- (21) Metal lath shall be coated expanded metal, coated perforated metal, or coated wire lath.
- (22) Lath on vertical surfaces where supports are not over 16" on centers and lath for ceilings, shall be metal lath weighing not less than 3.4 lbs. per sq. yd. or wire lath not less than #18 gauge (.047" diameter), 2½ mesh to the inch.
- (23) Lath on vertical surfaces, where supports are placed not over 12" on centers, shall be metal lath weighing not less than 3 lbs. per sq. yard, or wire lath not less than #20 gauge (.035" diameter), 2½ mesh to the inch.
- (24) If the distance between the centers of the structural supports of any lath is more than 16", the lath behind the tilework shall be provided with stiffeners not over 12" on centers.
- (25) Lath shall be stretched tight and shall be secured at all bearings with fastenings not more than 6" apart, as follows: To woodwork with not less than one 1" bright staple, or one six-penny bright wire nail; to metal furring with hammered prongs or twisted loops of wire; and to gypsum blocks and to masonry with specially hardened steel nails or self-clinching nails. In driving staples or nails the lath shall not be flattened or damaged.
- (26) Vertical joints in lath shall not occur except at structural supports and shall there be lapped one full mesh. All horizontal joints of lath shall be butted, and laced or tied with wire, at least once between supports.

SHRINKAGE MESH

- (27) Shrinkage mesh where specified herein for use in concrete setting beds shall be #16 gauge, unpainted expanded metal of from 2" to 3" mesh, or galvanized wire fabric of one of the following sizes. Rectangular mesh: #8 gauge (.162" diameter) wire at 3" centers crossed by #10 (.135" diameter) wire at 8" centers, or triangular mesh, #8 wire at 4" centers, diagonally laced with #14 wire 4" centers; or 4" x 7" hexagonal mesh of #10 gauge wire.
- (28) Shrinkage mesh shall be placed well within the mass of the concrete setting bed and where more than one width or length is required shall be lapped not less than one-third of a mesh. The mesh shall butt against walls and partitions and shall not be turned up.

BUILDING PAPER

- (29) Building paper shall be tar or asphalt saturated paper weighing not less than eleven (11) lbs. per 100 sq. ft. It shall be lapped at least 2" and, in connection with floors, shall be turned up at the walls at least 2 inches.

SETTING OF TILES

- (30) **GENERAL.** All tiles shall be firmly secured in place. Joints shall be well filled, all lines shall be kept straight and true, and all finished surfaces brought to true and level planes. The completed work shall be free from cracked or broken tiles.
- (31) **BORDERS AND PATTERNS.** Where borders, lines, patterns, panels or other effects are a part of the work, the tiles shall be properly spaced, and shall accurately reproduce designs shown on the drawings or effects described in the specification of the architect.
- (32) **EDGES.** All intersections and returns shall be perfectly formed. All cutting and drilling of tiles shall be neatly done without marring the surface. The cut edges of tiles against any trim, finish, built-in fixtures, etc., shall be carefully ground and jointed. Around electric outlets, plumbing pipes, or fixtures and fittings, the tile shall fit close, so that the regular plates, collars or coverings will overlap the tile.
- (33) **LAYING OUT.** All tilework shall be so laid out on floors and lengthwise on walls that, wherever possible, no tiles less than half full size shall occur. For heights stated in feet and inches, unless tilework is intended to exactly fill vertical spaces, courses shall be maintained full to produce nearest attainable height within a variation above or below equivalent to less than one half course to avoid cutting of tiles which would otherwise be necessary.
- (34) **TILE PACKAGES KEPT DRY.** All tiles shall be kept dry while in packages and shall not be allowed to lie in or upon wet sawdust or similar materials.
- (35) **SOAKING BEFORE LAYING.** All tiles, except vitreous tiles and ceramic mosaic, shall be soaked in clean water before being set.
- (36) **IN FREEZING WEATHER.** In freezing weather concrete setting beds or scratch coats or tiles shall not be placed in unheated portions of the structure.

NOTE: For Floating Method and Buttering Method of setting tiles see Par. (95), (97) and (98).

TILED FLOORS AND HORIZONTAL SURFACES

(Other than ceilings, soffits and sills)

CONCRETE SETTING BEDS

- (37) **GENERAL.** Concrete setting beds of stone, gravel or slag, or sand concrete, shall be 2" thick, except that directly on earth or fills referred to in Par. (53) they shall be 3" thick.
- (38) Concrete setting beds of cinder concrete, Par. (17) shall be 2½" thick, except that directly on earth or fills referred to in Par. (53) they shall be 3" thick.
- (39) Where joists are chamfered, the point of the joist shall be at least ¾" below the top of the concrete setting bed.
- (40) The upper flanges of any steel beams projecting into concrete setting beds shall be covered with loose sheet metal or building paper to prevent adhesion of the concrete setting beds.
- (41) All floor arches or slabs, and all wood floors, shall be swept free of loose particles before placing any concrete setting beds.
- (42) The contractor shall not install any tilework in floors of shower baths, except when located in basements, until a pan or safig of lead or other metal has been placed, turned up on all sides, and made watertight by other contractors. The finished surface of the tile floor shall be sloped to drain properly into the outlet.

- (43) **CONCRETE SETTING BEDS ON NEW WOOD CONSTRUCTION.** Unless otherwise provided for in the architect's specifications, a layer of building paper, lapped and turned up, shall be placed over wood floors as described in Par. (29).
- (44) Concrete setting beds shall be reinforced with shrinkage mesh as described in Par. (27) and (28).
- (45) **CONCRETE SETTING BEDS ON OLD WOOD CONSTRUCTION.** Where tile floors are to be laid over existing wood floors, the tile contractor shall cover the existing wood upper floor, or under floor, as the case may be, with building paper in accordance with the provisions of Par. (29).
- (46) On the surface thus prepared a concrete setting bed, 1" thick, composed of sand and cement as described in Par. (16), with shrinkage mesh as described in Par. (27) and (28), shall be spread. This concrete setting bed shall finish at such thresholds as are provided by the architect's specification, the thresholds being of sufficient thickness to receive a $\frac{1}{2}$ " layer of setting mortar plus the thickness of the tiles. Where joists are chamfered, the point of the joist shall be at least $\frac{3}{4}$ " below the top of the concrete setting bed.
- (47) **CONCRETE SETTING BEDS ON PRESSED STEEL CONSTRUCTION.** In connection with pressed steel joist systems of floor construction, the metal reinforcement and concrete slabs will be furnished and placed by other contractors as a part of such systems. Mortar setting beds only shall be provided by the tile contractor, and shall be placed directly on the concrete slab, unless joists have been set low as mentioned in Par. (48).
- (48) If steel joists are shown or specified lowered for the passage of pipes, concrete setting beds of thickness and as specified in Par. (49) and (50) shall be provided.
- (49) **CONCRETE SETTING BEDS ON CONCRETE SLABS OR OTHER MASONRY CONSTRUCTION.** Concrete setting beds shall not be placed until the exposed surfaces of masonry floor slabs, arches, or other structural work shall have been brought to the required level or surface for the concrete setting beds by other contractors, and not until such surfaces are free from mortar droppings, projecting joists, etc., and so they shall present comparatively smooth and even surfaces for concrete setting beds without any depressions, cracks, holes or open joints.
- (50) On the surfaces thus prepared, spread the concrete setting beds in accordance with Par. (37) or (38).
- (51) **CONCRETE SETTING BEDS ON OTHER CONCRETE OVER EARTH OR FILLS.** **Interior.** Where concrete setting beds for tilework are to be laid on concrete which has been placed over earth or fills, the setting beds shall not be laid until the lower work is suitably prepared by others as specified for concrete slabs and other masonry construction Par. (49). On the surface thus prepared, place concrete setting beds to the thickness specified in Par. (37) or (38).
- (52) **Exterior.** Follow specifications for interior concrete setting beds, Par. (51), except that cinders shall not be used in the concrete.
- (53) **CONCRETE SETTING BEDS DIRECTLY ON EARTH OR FILLS.** **Interior.** Where concrete setting beds for tilework are to be laid on earth or on fills of cinders, gravel or other materials (sand cushions separately specified), without intervening slabs of concrete, the concrete setting beds shall be 3" thick, of stone, gravel, slag or sand concrete, and shrinkage mesh shall be placed in these setting beds, in accordance with Par. (27) and (28). Cinders may be used in place of other aggregates unless prohibited by architect's specification.
- (54) **Exterior.** Follow specifications for interior concrete setting beds, Par. (53), except that cinders shall not be used.

CLEAVAGE PLANES

- (55) Sand Cushion. Where sand cushions are provided for in the architect's specification as a means of absorbing vibration or to afford a cleavage plane, a layer of clean sharp sand, not less than $\frac{1}{2}$ " thick, shall be spread and thoroughly compacted to a smooth and level surface. Over sand cushions shall be laid a layer of building paper as described in Par. (29), ready to receive the concrete setting beds.
- (56) Building Paper. Where so provided in the architect's specification, spread a layer of building paper in accordance with Par. (29), before placing concrete setting beds, to form a cleavage plane between concrete setting beds and surfaces underlying them.

MORTAR SETTING BEDS

- (57) Mortar for setting beds shall consist of one part Portland cement and three parts sand and shall not be less than $\frac{1}{2}$ " thick.
- (58) Unless the mortar setting bed is spread the same day, or the day after the concrete setting bed has been placed, the concrete setting bed shall be thoroughly saturated with clean, fresh water, and its surface uniformly hand dusted with Portland cement immediately before spreading the mortar of the setting bed.
- (59) The mortar shall be spread until the surface of the mortar setting bed is absolutely true and even in plane, either level or uniformly sloped for drainage, as the case may be. For all surfaces over 100 sq. ft. in area, screed strips shall be set as temporary guides to assure these results.
- (60) As large an area as can be covered with tile before the mortar has reached its initial set, shall be placed at one operation. When more setting mortar has been spread than can thus be covered, the unfinished portion shall be removed and cut back to a clean, bevelled edge.

SETTING OF TILES

- (61) Portland cement shall be uniformly hand dusted over the surfaces of the mortar setting beds immediately preceding the setting of the tile. The tiles shall be placed upon and firmly pressed and tamped into the mortar until exactly true and even with the finished floor lines.
- (62) In the case of ceramic mosaic, the joints between the sheets shall be kept the same width as those between the mounted tile and set without showing where the sections join.
- (63) Where the area of any floor is over approximately 100 sq. ft., the tiles or ceramic mosaic sheets shall be laid to a straight edge at regular intervals.
- (64) Wherever borders or defined lines occur, they shall be laid before the field or bodies of the floors or spaces to be tiled, and the tile shall be set as before specified. The inner edges of all borders against fields or bodies shall be kept straight, and any cutting of tiles for irregularities in wall lines or vertical planes shall be done along the outer edges.
- (65) Thresholds, if specified to be included, shall be set in a similar manner to borders, and if not included, the tilework of floors shall be brought to true lines, level with adjoining floors and stopped under doors, unless shown or specified to be continued into closets or other contiguous spaces.

- (66) Hearths, unless otherwise detailed or specified, shall be set flush with the surface of adjoining floors. In connection with hearths and fireplaces, supply and set any ash drops, features, fittings, or other materials, specified or scheduled by the architect.
- (67) Stairtreads, floors of shower baths, swimming pools, special hospital floors, and other surfaces not intended to be level, shall be sloped as detailed or directed for purposes of draining.
- (68) Tiled nosings, coves, curbings, gutters, or other moulded or shaped features, shall be thoroughly backed or built up with mortar or concrete. They shall be rigidly placed, reenforced or otherwise made firm and secure. Tiled window sills and jambs, partitions, copings, or other similar features, shall be set as described herein under Tiled Walls and Vertical Surfaces.
- (69) Where bathtubs are of built-in types, or extend to floors, the concrete setting beds over wood construction shall be continuous under them, and shall form close junction with all surrounding vertical planes. Tiling shall be omitted under such tubs, but under free standing tubs the tiling of floors shall be continuous to the surrounding tiling of vertical planes.
- (70) As soon as the cement mortar beds have sufficiently set, the tiles on floors or other horizontal surfaces shall be well washed with clean water, and the joints between the tile grouted or jointed as mentioned under Par. (71) to (75) inclusive.

GROUTING AND JOINTING

- (71) The joints between all units of ceramic mosaic and between the abutting sheets, as laid shall maintain the standard mounting width approximating 1/16 inch.
- (72) **WIDTH OF FLOOR JOINTS.** Unless otherwise shown, specified, or stipulated, the joints of other tiles shall approximate the following width, with uniform variance therefrom, either more or less, as may be desirable to cause the units, in the hands of skilled workers, to accommodate themselves to given spaces.

Vitreous and Semivitreous Tiles.....	$\frac{1}{16}''$
Flint and Hydraulic Tiles.....	$\frac{3}{16}''$
Plastic Tiles and Faience.....	$\frac{1}{4}''$
Quarry Tiles.....	$\frac{1}{2}''$

Joints in the fields of walls and floors should not run straight through with the joints in the base and top mouldings, but should break in order to emphasize the different function of the moulding as distinguished from the field.

- (73) All ceramic mosaic and other tiles set with close joints shall be grouted with Portland cement mixed with water to the consistency of thick cream. The grout shall be forced into the joints, sprinkled with dry cement and finished flush and true. All surplus grouting shall be removed and the faces of tiles left clean. In cases where acid solutions are required to clean the face of the finished tilework of surplus grouting or other particles of foreign matter, all hardware, such as hinges, cupboard trim, etc., shall be covered first by a coating of vaseline to protect the metal from the possible effect of acid fumes.
- (74) All joints not grouted shall be completely filled with mortar consisting of one volume of Portland cement and two volumes of sand as before specified and, at the option of the tile contractor, tempered with hydrated lime to extent of not more than 10 per cent. of the volume of cement and sand. All surplus mortar shall be wiped off and the faces of tiles left clean. White Portland cement, white sand, or mortar colors, in joints of tiles on horizontal surfaces—or fire clay for fireplace backs and jambs—shall be used only when and where so provided in the architect's specification or schedule and shall then replace the Portland cement or plain sand as here specified.
- (75) After being cleaned as just described, floors, or horizontal surfaces in each room or portion as completed, shall be closed to traffic or work until the tiles are firmly set. Par. (118). After this, all completed tilework shall be finally turned over in clean condition as described in Par. (119), (120) and (121).

TILED WALLS AND VERTICAL SURFACES

PREPARATION FOR THE SCRATCH COAT

- (76) **GENERAL.** Scratch coats shall not be applied until substantial grounds, plugs and other provisions have been installed by respective contractors to receive plumbing fixtures, electric outlets, radiator brackets, or any other fixtures or fittings to be secured against tiled surfaces.
- (77) In new construction work, when scratch coats are to be applied directly to concrete, brick, hollow building tile, stone or other masonry, without furring, the masonry surfaces shall be thoroughly moistened but not saturated.
- (78) In existing structures, where scratch coats are to be applied directly to masonry without furring, when such masonry has been previously coated with cement mortar or cement plaster, the mortar or plaster shall be removed, or hacked and wire-brushed in such a manner as to restore satisfactory suction for complete bonding of the scratch coat.
- (79) Where such existing masonry has been coated with mortar or plaster containing gypsum or lime, the mortar or plaster, or any painted surfaces, shall be entirely removed and the masonry hacked and wire-brushed as just described. In lieu of removing or hacking and brushing, such existing surfaces, if conformable to architect's details, or if approved, may be metal lathed to comply with requirements of Par. (86) and (88).
- (80) Scratch coats for tilework shall not be applied to new unfurred surfaces of concrete or other masonry construction until such surfaces shall have been brought to the required plane, plumb, reasonably straight and true, by other contractors, with the faces free of fins, excessive voids, or projecting joints, and left fairly rough, ready for the scrubbing specified in Par. (82).
- (81) Old surfaces of concrete, brickwork or stone, if smooth, shall be hacked, roughened, or raked by the contractor applying scratch coats as may be necessary to provide satisfactory bonding for the scratch coats.
- (82) Unfurred concrete to be tiled, whether new or old, shall be thoroughly scrubbed to clean the surface and give it additional roughness. At the option of the tile contractor this may be done by the use of wire brushes or by using muriatic acid diluted with 6 to 10 parts of water, scrubbed on until the aggregate is exposed, after which all traces of acid shall be removed by thorough rinsing.
- (83) **ON WOOD STUDDING OR WOOD FURRING.** On wood studding or wood furring to be tiled, furnish and attach building paper and metal lath as described in Par. (21) to (26) inclusive and Par. (29). This shall apply in the case of either old or new structures, as any existing lime or gypsum plaster shall invariably be removed by whatever contractor is specified in such cases; old wood lath to remain but shall be covered with metal lath.
- (84) Where tiles form architraves of doors, windows, or medicine cabinets, trims of openings, or other features and bases, furnish and secure strips of metal lath as described in Par. (21) to (26) inclusive.
- (85) **ON METAL STUDDING OR METAL FURRING.** Where pressed steel studs, metal channels, tees, or other metal supports are used for partitions or furring, the metal lath in connection with same will be furnished and applied by other contractors.
- (86) **ON GYPSUM BLOCKS.** Where tiles are to be set against gypsum blocks, furnish and place a layer of building paper; this is to be overlaid with stiffened expanded metal or stiffened wire lath as described in Par. (26), the lath to be secured in place by special anchorage or lacing as conditions require.
- (87) **Alternate.** At the option of the tile contractor one heavy coat of asphaltum paint or other equal damp-proofing coat may be substituted for the building paper back of the metal lath before specified for use on gypsum blocks.

- (88) **ON CORK OR OTHER INSULATION.** Where tiles are to be set against cork or other insulation, furnish and attach metal lath as described in Par. (21) to (26) inclusive. In such installations, the scratch coat shall contain suitable proportions of an established brand of waterproofing compound mixed in accordance with manufacturer's directions.

THE SCRATCH COAT

- (89) A scratch coat shall be placed back of all tiles. The scratch coat on unfurred masonry shall be applied in conformity with Par. (76) to (82) inclusive. In all other cases, the scratch coat shall be applied to metal lath.
- (90) Where bathtubs of built-in types are set against walls or partitions of masonry or gypsum construction, the scratch coat behind tubs shall be omitted below the undersides of rims. Against supports involving metal lath on wood, or steel studs, or furring, the scratch coat shall continue to and form close junction with concrete setting beds of floors. The tiling on all vertical surfaces in contact with built-in tubs shall abut the top of the rim, separated therefrom by a full width joint.
- (91) The mortar for scratch coat shall consist of one volume of Portland cement and three volumes of sand. At the option of the contractor, hydrated lime may be added not to exceed 10 per cent. of the volume of cement and sand, and plasterer's fibre or hair may be incorporated in the scratch coat.
- (92) The scratch coat shall be $\frac{1}{2}$ " thick, or more if necessary, to make an even and true surface at the proper distance from the face of the tiles allowing for the thickness of the tile and for a $\frac{1}{4}$ " bed of setting mortar for floating work and a $\frac{1}{2}$ " bed of setting mortar for buttered work. The scratch coat, at the option of the contractor, may be applied in two coats, instead of one.
- (93) The scratch coat shall be applied not less than twenty-four hours nor more than forty-eight hours before commencing to set the tiles. While still plastic the scratch coat shall be deeply scored or scratched, horizontally, approximately 1" apart.

SETTING OF TILES

- (94) Immediately before setting tiles, the scratch coat shall be thoroughly moistened with water, but not saturated.
- (95) On the surface thus prepared, the mortar for setting the tiles shall be applied in accordance with either of the methods described in Par. (97) and (98). In the absence of stipulations to the contrary, tiles may be set by either the floating or buttering method.
- (96) Setting mortar shall consist of three volumes of sand and one volume of Portland cement, to which hydrated lime not to exceed one tenth the volume of the cement and sand combined shall be added.
- (97) **FLOATING METHOD.** Screeds or temporary guide strips shall be mortared plumb and true onto the scratch coat, to accurately indicate the surface plane of the mortar setting bed, which shall be rodded and floated flush with the guide strips. A skim of neat Portland cement shall be applied to the mortar setting bed or the back of each tile as laid. Each tile shall be beaten into place and brought flush in plane with the other tiles.

- (98) **BUTTERING METHOD.** The scratch coat shall be spotted with small pieces of tile mortared plumb and true to accurately indicate the plane of the tiled wall when finished. Each tile shall be buttered and tamped in place and brought to a plumb and true surface, flush with the spots and with the other tiles. The back of each tile shall be completely covered with the mortar, bed at back of tiles shall be full and even, and all corners and crevices filled.
- (99) **FIREPLACES.** Tiles of fireplace facings or mantel breasts shall be set by either the floating or buttering method, but tiles of backs and jambs shall be set by the floating method unless shown or specified to be set flat, when they shall be tightly bedded against the surrounding masonry and set with full joists pointed on the face. Hearths to be as specified in Par. (66).
- (100) **INSERTS.** In the absence of stipulations to the contrary, any tile inserts indicated or specified, may be set by either the buttering or floating method.
- (101) **TRIMMERS.** All caps, bases, coves, mouldings, or other trim tiles, shall be backed full with mortar, and tamped into place. The reference by the architect in his specification or schedule to any cap, base, quarter-round, bead, cove, combination tiles with cove corner or angles, or any moulded tile, shall be taken to carry with it the inclusion of all requisite returns, stops, angles, corners or other "trimmers" which are an established standard of the Associated Tile Manufacturers, incidental to the trimmers mentioned, and they shall be furnished and set by the tile contractor, as if especially called for.

GROUTING AND JOINTING

- (102) Vertical units and joints shall be maintained plumb and even, and all caps, bases, mouldings and horizontal units or joints shall be maintained level and even. Joints in the tilework of shower bath partitions, window jambs, alcoves or in returns to contiguous spaces, shall be maintained level and true with the joints of main fields. Every fourth course of tile shall be brought to a level and straight line. Wooden wedges, if used for this purpose, shall be removed before grouting is done.
- (103) As soon as the mortar setting bed has sufficiently hardened, the tiles on walls or other vertical surfaces shall be well washed with clean fresh water and joints between tiles shall be grouted or jointed as mentioned under Par. (104), (105) and (106) unless otherwise stipulated. With the exception of the white Portland cement specified for joints of white tiles in Par. (104), white cement, white sand, or mortar colors, shall not be used in grouting or jointing, except when expressly so provided as mentioned in Par. (74).
- (104) Joints in white bright glazed tiles shall be maintained at the customary size, approximately $\frac{3}{64}$ " and shall be filled with white Portland cement mixed with water to the consistency of thick cream. All traces of this grouting shall be wiped from faces of tiles before hardening, and all joints shall be left full and smooth.
- (105) **WIDTH OF WALL JOINTS.** Unless otherwise shown, specified, or stipulated, the joints of other tiles shall approximate the following widths with uniform variance therefrom, either more or less, as shall be desirable to cause the units, in the hands of skilled workers, to accommodate themselves to given spaces.

Enamels, Vitreous and Semivitreous Tiles	$\frac{1}{16}$ "
Plastic Tiles and Faience	$\frac{1}{4}$ "

- (106) Where other kinds of tiles, including ceramic mosaic, are set on vertical surfaces they shall be grouted or pointed and left clean in accordance with Par. (71) to (74) inclusive, and (119) to (121) inclusive.

TILED CEILINGS, SOFFITS AND SILLS

PREPARATION FOR THE SCRATCH COAT

- (107) *ON HOLLOW BUILDING TILE.* When ceilings, soffits, or sills are to be tiled on unfurred hollow building tile, the provisions contained in Par. (76), and (77) shall be complied with before applying the scratch coat, which shall contain suitable proportions of an established brand of waterproofing compound, mixed in accordance with manufacturer's directions.
- (108) *ON CONCRETE.* The scratch coat shall not be placed on an unfurred concrete ceiling or soffit, but shall be applied to metal lath furnished and attached by another contractor.
- (109) *ON WOOD JOISTS OR WOOD STRIPPING.* To the underside of new wood joists or new wood stripping, furnish and attach expanded metal or wire lath as described in Par. (21) to (26) inclusive. For existing wood joists or stripping Par. (83) shall be followed.
- (110) *ON SUSPENDED CEILINGS WITH METAL SUPPORTS.* Supports and metal lath for such types of construction will be furnished and applied by other contractors.
- (111) *ON GYPSUM OR ON CORK OR OTHER INSULATION.* Preparation for scratch coat against gypsum, or against cork, or other insulation, shall be made in accordance with Par. (86), (87) and (88).

THE SCRATCH COAT

- (112) A scratch coat shall be placed back of all tiles, and be applied either directly to the hollow building tile as mentioned in Par. (107), or applied to expanded metal or wire lath, either furnished and attached by the tile contractor as described in Par. (109) and (111), or by other contractors, in accordance with the type of support, as mentioned in Par. (110).
- (113) The mortar for scratch coat shall be as described in Par. (91) and shall be applied to conform to Par. (92) and (93) providing a $\frac{1}{4}$ " mortar setting bed instead of $\frac{1}{2}$ ".

SETTING OF TILES

- (114) All tiles shall be set in mortar and in such manner as to comply with the descriptions in Par. (94) to (98) inclusive and with Par. (100) to (106) inclusive.

SWIMMING POOLS

- (115) The tilework of swimming pools, or of Turkish baths, steam rooms, etc., shall be prepared for and set in accordance with the requirements of all other portions of the Basic Specification and in addition the mortar setting beds and joints shall contain suitable proportions of an established brand of waterproofing compound mixed in accordance with manufacturer's directions. When the walls and floors of swimming pools are not waterproofed, the scratch coats and concrete setting beds shall be waterproofed as specified for the mortar setting beds.
- (116) Life rails shall be reinforced with properly shaped expanded metal and the high point shall be brought to an exact level on all sides of the pool. Scum gutters shall be formed in accordance with details and drained to the outlets with a high point between each pair of outlets.

ACCESSORIES

- (117) The furnishing and setting of accessories such as andirons, grates, medicine cabinets, mirrors, recessed heaters, paper holders, soap cups, towel racks, shelves, etc., are not included, unless specified or scheduled as a part of the tile contract and listed in detail. When included, they shall be furnished, delivered and set by the tile contractor.

FINAL CLEANING AND RESPONSIBILITY

- (118) The contractor shall post suitable notices or make other provisions to the effect that no one shall pound about freshly tiled walls or ceilings, nor walk upon freshly tiled floors, for several days after the tiles are set.

CLEANING

- (119) Upon completion of the various portions of his work, the tile contractor shall remove all unused materials, rubbish, etc., in connection with this contract and shall give the tilework one thorough cleaning at the time of its completion. (See paragraph 73.)
- (120) After completion and cleaning in accordance with Par. (119) the obligation of the tile contractor shall cease as to any damage or injury which may be done to the tilework by others, and as to any further cleaning of the tilework upon final completion of the building as a whole, which additional cleaning shall be done only if so required by the architect's specification.

RESPONSIBILITY

- (121) Neither the final certificate nor payment nor any provision in the Basic Specification shall relieve the contractor of responsibility for faulty materials or workmanship, and he shall remedy any defects due thereto, which shall appear within a period of one year from the date of final completion of the structure, unless a longer date is stipulated in the architect's General Conditions or in his Modifications to this Basic Specification.

DEFINITIONS OF CERTAIN MATERIALS AND METHODS REFERRED TO IN THE BASIC SPECIFICATION

See Publication K-200 for other descriptive information.

BUTTERING

- (122) A method of setting tiles in which the back of each tile is "buttered" with mortar and then set in place. Floating is the alternate method.

(See Buttering Method Par. (98) and Floating Method Par. (97) in Basic Specification.)

CLEAVAGE PLANE

- (123) A layer of material such as sand or building paper, used under certain conditions to separate the concrete setting bed from the under slab or other structural support. This is intended to allow for possible independent movement of the two planes.

CONCRETE SETTING BED—See Setting Beds.

FLOATING

- (124) A method of setting tiles by beating the tiles onto the fresh surface of the mortar setting bed. It is the method used for setting mounted sheets of tile, and is the alternative of the buttering method for setting unmounted tiles.

(See Floating Method Par. (97) and Buttering Method Par. (98) in Basic Specification.)

GROUTING

- (125) The method of finishing the joints of tilework in floors, walls, etc., by filling with a mixture of cement and water of the consistency of thick cream. This mixture is called a "grout."

HYDRATED LIME

- (126) Powdered lime resulting from the factory hydration of quicklime. It is delivered in bags as distinguished from quicklime, which latter—in lumps or granular form—requires hand slaking. A standard paper bag of hydrated lime weighs 50 lbs. and in volume is equal to about $1\frac{1}{4}$ cu. ft.

INSERTS

- (127) In the Basic Specification this term refers to isolated or grouped tiles set in a finished surface of other material such as brick, stone, stucco, concrete, or cement, whether on interior or exterior walls or floors. It includes bands and borders as well as panels and accentuation spots.

MORTAR SETTING BED—See Setting Beds.

MOUNTED TILES

- (128) For accuracy in setting as well as convenience in handling certain small tiles are mounted on paper pasted to the face of the tiles. These mounted sheets are set as units by the floating method. The paper is soaked and removed after setting.

SAND CUSHION

- (129) A layer of sand sometimes placed under the concrete setting bed of a tiled floor to insulate it from the structure, thereby tending to prevent vibration due to machinery in motion, wind stresses, etc., from being transmitted to the tiled surface, as well as to minimize the possibility of structural cracks appearing on the surface.

SCRATCH COAT

- (130) The Portland cement plaster forming the backing for the setting mortar of tiled walls and ceilings. It is scratched, scored, or grooved, to give key for the mortar setting bed.

SCREEDS OR SCREED STRIPS

- (131) A wooden strip, or a strip of mortar, laid on a floor or wall at intervals, to gauge the thickness of setting beds, or to indicate the finished tiled surface.

SETTING BED, CONCRETE

- (132) The term Concrete Setting Bed, as used in the Basic Specification, refers to a layer or bed of concrete under a tiled floor or other horizontal tiled surface. This does not come in contact with the tiles, but serves as a foundation on which to apply the setting mortar. It is sometimes known as the underfill or base.

SETTING BED, MORTAR

- (133) Wherever tiles are to be set, a layer of mortar is applied, known as the Setting Mortar or the Mortar Setting Bed. Into this the tiles are beaten when set by the floating method.

SHRINKAGE MESH

- (134) A layer of expanded metal or wire fabric, of a large mesh. Its use tends to prevent cracking of setting beds due to contraction and expansion when affected by temperature changes or due to cracks or settlements in structural supports from other causes.

TRIMMERS

- (135) The terms Trim Tile and Trimmers are used interchangeably to designate bases, caps, corners, angles, architraves, and other tile mouldings and shapes, as made and standardized by the Associated Tile Manufacturers to suit the various kinds, grades, and sizes of tiles.

See Other Publication—"Glazed Tiles and Trimmers"

Additional copies of yellow, green and pink pages will be furnished specification writers free of charge for convenient use as "scratch pages" in preparing manuscripts.

SPECIFICATIONAL PARAGRAPHS

suggested for rewriting into the

ARCHITECT'S SPECIFICATION

The short form on this and next page with one or more graphic or typewritten schedules as indicated on following yellow pages is all that need be included in the architect's specification. See green pages for Possible Modifications and pink pages for work of Other Trades.

TILEWORK

(A) Furnish all materials and labor necessary for the completion of the tilework according to the accompanying drawings and the following specification [and schedules]. The Basic Specification for Tilework, Second Edition, 1924, as issued by the Associated Tile Manufacturers, Beaver Falls, Pa., in so far as any portion is applicable to this building, is hereby declared to be and is made a part of the contract to have the same force and effect as though written in full in this specification [except as it may be modified herein.]*

(B) **SAMPLES.** *If samples are to be furnished, the following paragraph is suggested:*

The contractor shall, [before] [promptly after] the award of the tile contract in accordance with Par. (5) and (6) of the Basic Specification, submit to the architect typical samples of each kind and grade of tile specified or proposed to be used.

(C) **LAI-UP EXAMPLES.** *If examples of tiles as set in place are to be required for approval, the following paragraph is suggested:*

The contractor shall, after setting an area approximating.....sq. ft. of tilework where directed in....., arrange for its inspection by the architect before proceeding with further installation, which shall then be done in accordance with the example as approved or as changed until approved.

*Brackets [] on the colored pages indicate alternate or optional words or clauses to be retained or crossed out. Dotted lines.....are blanks for filling out or spaces for writing requirements.

(D) SINGLE CONTRACT OR SEPARATE WORK. *If desired use either (a) or (b).*

When tile contractor assumes concrete setting beds, building paper, metal lath and scratch coats:

(a) The tile contractor may sublet, or may employ other trades, for the furnishing and placing of concrete setting beds, building paper, metal lath and scratch coats, but such work shall be included as part of his contract and shall be done under his supervision, and he shall assume responsibility for its being satisfactory to receive his mortar setting beds and tiles.

Note. It is suggested that paragraphs be put under their respective headings in the specification to indicate that the above work is included in tile contract. See paragraphs under Other Trades on pink paper.

When the concrete setting beds, building paper, metal lath and scratch coats are not assumed by the tile contractor:

(b) Concrete setting beds, building paper, metal lath, and scratch coats will be furnished, applied, brought to the proper surface or planes and left complete by other contractors ready to receive the tile contractor's mortar setting beds.

Note. The above items, excluded from the tile contract, should be provided for under their respective headings in other portions of the specification. See paragraphs under Other Trades on pink paper.

(E) OTHER MATERIALS. *If waterproofing, marble, slate, soapstone, metal, or any material other than tilework is to be furnished and installed as a part of the tile contract, a separate "insert" should be prepared, as the Basic Specification is confined to tilework.*

The tile contractor shall furnish, set and leave complete (follow insert).

(F) MODIFICATIONS OF THE BASIC SPECIFICATION. *If modifications of the Basic Specification are to be made, go from here to Optional Items on green paper.*

Note to Stenographer. Insert here, in consecutive order, all text matter on green paper not crossed out by me.

Signed.....
Specification Writer

(G) SCHEDULES. *Two types of suggested schedules follow as examples of concise methods of listing tile installations. The use of schedules is suggested by the American Institute of Architects in its "Handbook of Architectural Practice" as mutually helpful to architect and contractor.*

(a) The first illustrates a graphic form such as might be reproduced on the drawings or be blue-printed for binding into the specifications.

(b) The second method is a schedule in the form of a list and, although suitable for accessories becomes cumbersome if attempted for an entire large tile installation.

(c) If a schedule in one of these two forms is not used it is suggested that a series of paragraphs equivalent thereto be incorporated in the specifications.

The kinds of tiles and extent of tilework shall be as follows:

Sloping letters indicate filling in for a typical Residence Installation.

SCHEDULE OF TILEWORK

CLIENT _____ LOCATION _____

		Terrace & Steps	Vestibule	Reception Room Alcove	Fireplace	Bath Rooms 1 & 2 Room Shower	Kitchen & Pantry	Slop Hopper
FLOORS	Grade	Com.	Com.	Sel.	Sel.	Sel.	Sel.	Com.
FIELD	Kind	Flint	Flint & Hyd.	Plastic	Faience	Cer. Mos.	Cer. Mos.	Vit.
	Finish	✓	✓	✓	Dull	✓	✓	✓
	Size	6"x6"	6"x6"	3" Oct.	4 1/4"x4 1/4"	1 1/2"x 1/2"	1" Hex.	3"x3"
	Design	Sq. Jt.	Diag. Jt.	See Dr	Drawings	Herringbone	✓	Broken St.
	Color	Sage	Bk & Wh.	No.	No.	Lt Blue	Lt Blue	Celadon
JOINTS	Width	1/2"	Std.	Std.	3/8"	Std.	Std.	1/4"
	Color	Wh.	Std.	Std.	Buff	Wh.	Wh.	Std.
BORDER	Kind	None	Cer. Mos.	Faience	Faience	Vit.	None	Vit.
	Finish		✓	Dull	Dull	✓		Dull Gl.
	Size		6 1/4" wide	4 1/4"x4 1/4"	4 1/4"x2 1/8"	3"x3"		2-3"x1 1/2"
	Design		No.	Plain	See drawing	Plain		No.
	Color		Bk & Wh.	No.	No.	Wh & Blue		No.
JOINTS	Width		Std.	Std.	3/8"	Std.		3/8"
	Color		Std.	Bl.	Buff	Std.		Cr.
THRESHOLDS			No.			No.	See curb below Lead pan by plumber	No.
WALLS	Height		5'-6"	To Sill	4'-3"	7'-0"	To Ceil.	6'-0"
FIELD	Kind		Glazed	Plastic	Faience	Glazed	Glazed	Glazed
	Grade		Sel.	Sel.	Sel.	Std.	Std.	Com.
	Finish		Dull	✓	Dull	Bright	Bright	Matt.
	Size		3"x3"	3"x1 1/2"	4 1/4"x4 1/4"	4 1/4"x4 1/4"	4 1/4"x4 1/4"	6"x3"
	Design		Sq. Jt.	Broken St.	Sq. Jt.	Sq. Jt.	Sq. Jt.	Broken St.
	Color		No.	Buff	No.	Wh.	Wh.	No.
JOINTS	Width		Std.	Std.	3/8"	Std.	Std.	Std.
	Color		Wh.	Std.	Buff	Std.	Std.	Buff
BASE	Design	6" Shoulder	No. A-3410	Special		No. A-3620	No. A-3620	No. A-3310
	Color	Lt. Grey	No.	Red		Wh.	Wh.	No.
CAP	Design		No. A-4320	Special		No. A-4150		No. A-4220
	Color		No.	Buff		Wh.		No.
BANDS	Above Base		1-4 1/4"x2 1/8"			2- 1/2"x6"		
	Color		No.			Blue		
	Below Cap		2-4 1/4"x1 1/8"			2- 1/2"x6"		Two 6"x1" Enam.
	Color		No.			Wh.		Buff
CORNERS	External					No. A-1440	No. A-1440	No. A-1632
	Internal		Sq.	Sq.		Sq.	No. A-1441	Sq.
								No. A-1623
FURTHER DETAILS								
CEILING	Follow walls						Tiled	
DOOR TRIM						No. A-5410		
" PLINTHS						No. A-5471		
WINDOW TRIM						No. A-5310		No. A-5300
" SILL				Like wall		No. A-7500		No. A-7500
SHOWER CURB	Height 6"						No. A-7400	
FIRE PLACE BACK & JAMBS					See Drawing			
" " INNER HEARTH					(Soapstone)			
STEP NOSING		No.		No.				
Step Riser		Same as Floor		Same as Floor				
KEY		Hyd. - Hydraulic Vit. - Vitreous Sem. Vit. - Semi-Vitreous Cer. Mos. - Ceramic Mosaic Enam. - Enamel				Sq. - Square Jt. - Joint Dk. - Dark Lt. - Light Cr. - Cream		Bk. - Black Wh. - White Gy. - Gray Gn. - Green Gt. - Granite
ARCHITECT _____		ADDRESS _____				(Date) _____		

The above is offered as an example of one form of a suggested schedule

SCHEDULE OF ACCESSORIES:

Furnish accessories, and build them into the tilework, to the number given in each location according to the following list:

NOTE. Any variations from manufacturers' regular patterns, finish or decoration will require special making.

In Each BATHROOM NOS.....	In Each BATHROOM NOS.....
() Bath robe hook.....No.....	() Bath robe hook.....No.....
() Electric heater....."	() Electric heater....."
() Grab rail....."	() Grab rail....."
() Medicine Cabinet....."	() Medicine Cabinet....."
() Mirror....."	() Mirror....."
() Paper holder....."	() Paper holder....."
() Shelf....."	() Shelf....."
() Soap holder....."	() Soap holder....."
() Sponge holder....."	() Sponge holder....."
() Tooth brush holder....."	() Tooth brush holder....."
() Towel bar....."	() Towel bar....."
() Tumbler holder....."	() Tumbler holder....."

In Each TOILET ROOM NOS.....	In Each TOILET ROOM NOS.....
() Mirror.....No.....	() Mirror.....No.....
() Paper holder....."	() Paper holder....."
() Shelf....."	() Shelf....."
() Soap holder....."	() Soap holder....."
() Towel bar....."	() Towel bar....."
() Tumbler holder....."	() Tumbler holder....."

KITCHEN

()	No.....
()	"
()	"

PANTRY

()	No.....
()	"
()	"

LAUNDRY

()	No.....
()	"
()	"

OTHER PLACES

()	No.....
()	"
()	"

FIREPLACE IN ROOM NO.....

() Andirons.....No.....
() Ash drop....."
() Grate....."
() Metal rim....."

FIREPLACE IN ROOM NO.....

() Andirons.....No.....
() Ash drop....."
() Grate....."
() Metal rim....."

For specification writers who may wish to modify certain portions of the Basic Specification, the following clauses are offered for consideration as Optional Items, to follow Par. (F) yellow paper.

MODIFICATIONS OF THE BASIC SPECIFICATION

The Basic Specification for Tilework previously referred to is hereby modified as follows:

(H) CINDERS

If cinders as mentioned in Par. (15), (17), (38) and (53) are not to be allowed, the following clause is suggested:

- (a) Cinders shall not be used in concrete setting beds in connection with tilework anywhere [except under basement or cellar floors].*
- (b) In stories above basement if cinder concrete is used, it is required Par. (38) to be 2½" thick as against 2" thick for concrete made of other aggregates. This ½" difference should be allowed for in figuring finished floor levels.
- (c) Cinder concrete, unless prohibited as above, is in basements specified the same thickness, 3", Par. (38), as other concrete when directly on earth or fills.
- (d) Par. (U) (pink paper) refers to work of other trades in connection with fills, and concrete if over same, but in the interest of all concerned such conditions should be noted or shown on the drawings.
- (e) See Par. (Y) (pink paper) for avoidance of contact of cinders and metal and for wrapping or covering of pipes.

(I) SHRINKAGE MESH

- (a) *Over Wood Floors.* If shrinkage mesh is not to be required for concrete setting beds over wood floors in new construction as specified in Par. (44), so state somewhat as follows:
- (b) Shrinkage mesh is not required in concrete setting beds over wood construction.
- (c) *Over Earth or Fills.* If the nature of the surface underlying concrete setting beds is sufficiently firm to seem to warrant the omission of shrinkage mesh from the concrete setting beds as specified in Par. (53) and (54), the following clause is suggested:
- (d) Shrinkage mesh is not required in concrete setting beds over earth or fills in locations as follows,.....
.....
- (e) *Over Cleavage Planes.* If sand cushions or building paper are used as cleavage planes and shrinkage mesh is to be placed in concrete setting beds over same, state thus:
- (f) Shrinkage mesh shall be placed in concrete setting beds over sand cushions in.....
[over building paper in]

*Brackets [] on the colored pages indicate alternate or optional words or clauses to be retained or crossed out. Dotted lines..... are blanks for filling out or spaces for writing requirements.

(J) CLEAVAGE PLANES

(a) *Sand Cushions.* Where it is desired to place sand cushions as a cleavage plane or for other purposes, Par. (55), fill in and insert this clause:

(b) A layer of sand not less than $\frac{1}{2}$ " thick shall be spread in accordance with the provisions of the Basic Specification under concrete setting beds in the following locations:.....
.....
.....

(c) *Building Paper.* If it is desired to place building paper, as a cleavage plane, Par. (56), under concrete setting beds over concrete slabs or other masonry construction or over earth or fills, applicable to Par. (49), (51), (52), (53) and (54), the following clause is suggested:

(d) A layer of building paper shall be placed, in accordance with the provisions of the Basic Specification, before spreading concrete setting beds, in the following locations.....
.....
.....

(K) BUILDING PAPER

The Basic Specification calls for building paper to be placed between wood floors and concrete setting beds, Par. (43) and (45), and on wood studs back of scratch coats, Par. (83), to prevent absorption of water by the wood, and on walls to produce the effect of back plastering. When it is desired to omit this paper in any of these locations, the following clause is suggested:

(a) Building paper is not required [over wood floors] [on wood studs or wood furring].

(L) SHOP DRAWINGS

If the nature of the installation warrants it and shop or setting drawings or rubbings are desired by the architect, the following is suggested:

(a) Before laying tilework the contractor shall submit to the architect, shop or setting drawings [and rubbings] for the tiles to be laid in
.....
.....

(b) Note. With respect to following designs, spacing of tiles, and possible variations in heights as affected by courses, see Par. (31), (33).

(M) THRESHOLDS

Par. (46) and (65) provide for the stopping and finish of tile floors at doors. If contiguous spaces are to be tiled or if thresholds are required, specify somewhat as follows:

- | | |
|--|--|
| (a) The tiles of floors shall extend
under doors and into closets
and other contiguous spaces. | (b) Thresholds at.....
[will] [shall] be of
(here state the material)
furnished and set by [another
contractor] [tile contractor]. |
|--|--|

(N) FIRE CLAY FOR FIRE PLACES

If fire clay is required for setting tiles in backs and jambs of any fireplaces fill in and insert clause below, as Par. (74) of the Basic Specification refers the matter to the architect's specification.

- (a) Fire clay, instead of mortar, shall be used in setting the tiles in backs
and jambs [and inner hearths] of fireplaces in.....
.....

(O) GROUTING AND JOINTING

- (a) *Special Colors.* If colored grouting or jointing is desired, or if white cement and white sand are required, otherwise than as specified in Par. (74) and (103) of the Basic Specification, clauses similar to the following should be filled in and inserted.

- (b) White Portland cement and white sand shall be used for grouting or
jointing of tilework in the following places:.....
.....
.....

- (c) Mortar colors as selected by the architect shall be used to tint the
joints of tilework in the following places.....
.....

- (d) *Special Widths.* Standard as well as definite widths are stipulated in Par. (71), (72) and (104) and (105) of the Basic Specification. If it is desired to vary the definite width in certain places the following clause is suggested:

- (e) The joints between tiles in the following locations shall be of the widths
stated below.....
.....

- (f) Note. The 1/16" joint for ceramic mosaic is standard for making and mounting. Any variation of the joint in ceramic mosaic will require making of special mounting boards.

(P) BUTTERING VS. FLOATING METHODS

- (a) *Good results may be attained through either of these methods of setting tiles on walls and ceilings. The method used by tilers varies according to locality. The Basic Specification Par. (95), (97) and (98) provides that either method may be used in the absence of stipulations to the contrary. If, therefore, one only of these methods is to be employed, the architect's specification should say:*
- (b) Tiles shall be set by the [buttering] [floating] method only in
-

(Q) CERTIFICATE OF GRADE

- (a) *The contractor for tilework, in accordance with Par. (7) of the Basic Specification, furnishes the architect with a Certificate of Grade stating the grade, kind and full quantities of each shipment of tiles furnished under the contract. (See reduced facsimile of certificate on back of cover of Basic Specification.)*
- (b) *In the case of small installations where the tile contractor may be carrying in stock a sufficient quantity of tiles to complete the work without placing separate order with the manufacturer, it may be desirable to waive this requirement, and through means of samples and by personal inspection establish satisfactory compliance with the requirements as to kind or grade stipulated in this specification or listed on the schedule. In such cases the following clause is suggested:*
- (c) *In consideration of the small amount of tiles required for this installation the furnishing of a certificate will be waived provided that, by means of samples and satisfactory evidence, the architect is convinced that the kind and grade of tiles to be used complied with the requirements of this specification when placed in stock by the tile contractor.*

(R) ADDITIONAL CLEANING

- (a) *In case cleaning of tilework is to be done at completion of building, Par. (120), in addition to cleaning on completion of tilework, Par. (75) and (119), this fact should be stated somewhat as follows:*
- (b) *After other trades have completed their work, the tile contractor shall give all tiled floors a thorough additional cleaning and shall clean any tiled walls as may be necessary to leave all tilework in perfectly clean condition.*

(S) RESPONSIBILITY

- (a) *The closing paragraph of Basic Specification Par. (121), provides for remedying any defects within a period of one year from completion of building. If otherwise covered in General Conditions, or if a longer period or a waiver is to be provided for, amendments should be inserted here:*
-
-
-

- (b) *See Explanation of the Documents, Pages II and III, especially Par. (j), (k) for reference to items under General Conditions.*

The following clauses or others of similar purport are suggested for use under the appropriate headings in the architect's specification.

WORK OF OTHER TRADES
suggested for rewriting into the
ARCHITECT'S SPECIFICATION

(T) CARPENTRY

Work to be done in connection with structural supports regardless of who furnishes concrete setting beds or scratch coats.

- (a) The contractor for carpentry work shall frame with trimmers and headers all joists under floors to be tiled in such manner, that it will not be necessary to do any cutting of joists in order to accommodate any soil pipes, and that it will not be necessary to cut out joists deeper than.....*inches for any other pipes.
- (b) Joists under tiled floors shall be bridged at least once in their span, and not over five feet apart, with not less than 1" x 2" cross bridging, accurately fitted and nailed at each end with two nails (eightpenny).
- (c) Wherever so shown, or practicable, the floor joists shall be lowered to the depth required for the construction of the tile floors. On top of such joists lay a floor of not less than $\frac{1\frac{3}{8}}{1\frac{5}{8}}$ " thick by not over 6" wide boards, placed about $\frac{1}{4}$ " apart and securely nailed to each joist.
- (d) Where floor joists are not lowered, their tops shall be beveled off to a sharp edge. To the sides of the joists, at the distance below the finished floor required for the construction of the tiled floors, securely nail not less than 1" x 2½" cleats, and in between the joists cut and set 1" by not over 6" wide boards laid about $\frac{1}{4}$ " apart and securely nailed to the cleats.

*Dotted lines.....on the colored pages indicate blanks for filling out or spaces for writing requirements. Brackets [] indicate alternate or optional words or clauses to be retained or crossed out.

(T) CARPENTRY—continued

- (e) *In alterations or additions where wood floors exist under spaces to be tiled, consult Par. (45) and (46) and indicate below any special requirements. The same applies to removal of any existing plaster mentioned in Par. (83). See also items referred to under "Old Work" in Index.*
- (f) *In the case of any wooden suspended ceilings, or other wood construction required for tiled surfaces, use blank lines below, stating also, if such is the intention, that studs and furring strips are to be placed 12" on centers, instead of 16", back of tilework. This spacing is "preferred construction" but the Basic Specification automatically provides for heavier metal lath if spacing is wider than 12".*
- (g) *It can not however provide for construction to receive tilework and it is suggested that the architect specify or show wood bracing between studs at height of wainscots, or suitably spaced when partitions are tiled higher.*

When tile contractor assumes concrete setting beds, building paper, metal lath and scratch coats:

- (h) Note that any building paper required under concrete setting beds or behind scratch coats for tilework is not a part of the carpenter's work but is specified under the heading of Tilework.

When the concrete setting beds, building paper, metal lath, and scratch coats are not assumed by the tile contractor:

- (i) Furnish all building paper required [under concrete setting beds][behind scratch coats on metal lath], specified under Tilework in accordance with the Basic Specification for Tilework, and apply same as described therein.

(U) CONCRETE OR OTHER MASONRY WORK

Work to be done in connection with structural supports regardless of who furnishes concrete setting beds or scratch coats.

- (a) Vertical surfaces of concrete or other masonry which are to be faced with tile shall be brought to the proper plane to receive the required thickness of scratch coat and tiles, and shall be made plumb, reasonably straight and true, with faces free of fins, projecting joints or excessive voids, and left fairly rough.
- (b) Horizontal surfaces of concrete or other masonry construction which are to receive tilework shall be brought to the required level or surface for the concrete setting beds and shall be left free from mortar droppings, projecting joints, etc., and shall present comparatively smooth and even surfaces ready to receive concrete setting beds for tilework without any depressions, cracks, holes or open joints.
- (c) *Fills. If any fills of earth, gravel, cinders or other materials are required under tiled floor construction in basements, or on terraces, porches, walks, etc., the blank lines below will afford space for their enumeration, and for a statement that they must be thoroughly compacted to form a suitable foundation for the tilework.*

(d)

.....

.....

.....

.....

- (e) *If it is desired to place concrete over fills in order that cleavage planes, or membranous asphalt or other waterproofing, may be placed under concrete setting beds for tiled floors or surfaces in basements, enclosed porches, sun parlors, churches, industrial establishments, etc., fill out and insert clause similar to:*

- (f) This contractor is to place [stone] [cinder] concrete.....inches thick [reinforced with.....] over earth or fills in following locations.....

.....

.....

.....

.....

(U) CONCRETE OR OTHER MASONRY WORK—continued

- (g) *In the case of alterations or additions refer to appropriate paragraphs in Basic Specification, listed under "Old Work" in Index. The blank lines below will afford space for enumerating these requirements or any special requirements.*

When tile contractor assumes concrete setting beds, building paper, metal lath and scratch coats.

When the concrete setting beds, building paper, metal lath and scratch coats are not assumed by the tile contractor.

- (h) Note that concrete setting beds under tile floors are not a part of this contractor's work as the same are specified under the heading of Tilework.

- (i) Furnish and lay complete all concrete setting beds under tiled work. The same are to be fully in accordance with the requirements of the Basic Specification for Tilework and any modifications to same in these specifications under Tilework including any shrinkage mesh therein required.

- (j) *If concrete setting beds are to be placed directly on earth or fills, add:*

Concrete setting beds over earth or fills of _____ are to be 3" thick in accordance with the Basic Specification for Tilework [with] [without] shrinkage mesh as therein provided.

(V) LATHING

Work to be done in connection with structural supports regardless of who furnishes concrete setting beds or scratch coats.

(a) *If pressed steel joists, or studs, or other forms of metal joists, studs, channels, tees or furring strips form the structural supports for any tilework, it is assumed that the architect's specification will provide that metal lath in connection with same shall be furnished and applied as a part of such construction. The Basic Specification states that metal lath on this type of construction is not included as a part of the tilework. See Par. (47) and (85).*

(b) *If concrete ceilings or soffits are to be tiled, the Basic Specification, Par. (108), states that scratch coats shall not be placed on unfurred concrete surfaces. Unless ceilings are suspended, a clause to cover this situation should be filled in below.*

(c) _____

(d) *Suspended ceilings of wood construction to receive tilework are referred to under Carpentry, Par. (T), (pink pages) and the metal lath on same is provided for in the Basic Specification. Metal lath and supports for suspended ceilings of metal construction are excluded Par. (110), from tilework in Basic Specification. Where such ceilings are to be tiled, their construction including metal lath ready to receive the scratch coat, should be covered by filling in below:*

(e) *For reference to rounded corners or angles see Par. W. a., on page 14.*

(f) *In the case of alterations or additions refer to appropriate paragraphs in Basic Specification, listed under "Old Work" in Index.*

When tile contractor assumes concrete setting beds, building paper, metal lath and scratch coats:

(g) Note that metal lathing back of tilework is not specified as a part of this contractor's work as the same is specified under the heading of Tilework.

When the concrete setting beds, building paper, metal lath and scratch coats are not assumed by the tile contractor:

(h) Furnish and secure metal lath to all wood or metal joists, studs or stripping, or materials other than masonry—all to be in accordance with the provisions of the Basic Specification referred to under the heading of Tilework.

(W) PLASTERING

- (a) *It is assumed that specification for Plastering will state whether internal or external angles or corners are to be squared, chamfered, rounded or coved—and it is suggested that, when rounded or coved, a clause should be included requiring the plastering contractor to confer with the tile contractor in order to insure that the center of radius for both tile and plaster shall be the same.*

- (b) *In the case of alterations or additions refer to appropriate paragraphs in Basic Specification, listed under "Old Work" in Index.*

When tile contractor assumes concrete setting beds, building paper, metal lath and scratch coats:

When the concrete setting beds, building paper, metal lath and scratch coats are not assumed by the tile contractor:

- | | |
|--|--|
| (c) Note that scratch coat work back of any tiled walls or ceilings is not a part of this contractor's work, as the same is specified under the heading of Tilework. | (d) Furnish and set scratch coat work back of all tiled walls or ceilings, specified under Tilework—all such scratch coat work to be prepared for and done in accordance with the requirements of the Basic Specification referred to therein. |
|--|--|

(X) ROOFING OR PAVING WORK

Work to be done in connection with structural supports regardless of who furnishes concrete setting beds or scratch coats.

- (a) *Where tiles are used as surfacings for flat roofs, domes, roof gardens, roof decks, etc., over spaces intended for occupancy, dependence should not be placed entirely upon the jointed tiled surfaces as roofing. Membranous waterproofing, asphalt or other materials, and suitable expansion joints are required in connection with such work.*
- (b) *In the interiors of buildings, floors in Turkish baths, shower bath rooms (where waterproofed throughout instead of using only metal pans in the showers), special hospital floors, etc., require consideration in connection with waterproofing of sub-flooring.*
- (c) *The blank lines below will afford space in which to write requirements for either (a) or (b).*

- (d) *In the case of alterations or additions refer to appropriate paragraphs in Basic Specification, listed under "Old Work" in Index.*

(Y) PLUMBING AND HEATING

- (a) *Tiled floors in shower baths where the space below is intended for occupancy should have a pan or safig of lead or other metal below the tilework, Par. (42). Where pans or safings of metal are to be provided, the blank lines below will afford space in which to specify them as a part of the Plumber's work, including drainage fittings or separate pipes to drain water from the pans. Cinder concrete on account of its corrosive action, should not, of course, be placed over metal pans.*

(b) _____

- (c) *If cinder concrete, Par. (15) and (17) is used under tilework it is suggested that the plumbing and heating pipes therein be wrapped or covered to protect them from the corrosive action of the cinders. Wrapping is also desirable for hot water or heating pipes occurring in any concrete to allow for the expansion of the pipes, although, of course, such pipes should not be imbedded in concrete, if avoidable. The blank lines below will afford space to provide for such wrapping or covering of any metal.*

(d) _____

- (e) *In the case of swimming pool installations the blank lines below will afford space to enumerate the water supply and drainage requirements.*

(f) _____

- (g) *In the case of alterations or additions refer to appropriate items mentioned in Basic Specification, listed under "Old Work" in Index.*

(Z) SWIMMING POOLS

- (a) *The Basic Specification Par. (115) and (116) provides for the tiling of swimming pools under ordinary requirements where pools with solid masonry walls are built directly on or sunken into the ground. The construction work should be specified under appropriate headings. See book on swimming pools issued by the Associated Tile Manufacturers for descriptions and details.*

(ZZ) OTHER WORK

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This is to Certify

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The package certificates which are placed in each container correspond with the identifications of this master certificate.

Date of Shipment _____ Consisting of _____ Bbls. _____ Boxes

Shipped for _____

Shipped to _____

DATE AND NO. CUSTOMER'S ORDER	PRIVATE MARKS	PACKAGE NUMBER	TYPE AND GRADE OF CONTENTS

Date _____ Per _____

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